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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/858,476	05/17/2001	Hiromu Kikawa	H6810.0018/P018	2984
24998	7590	12/06/2004	EXAMINER	
DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP			PATEL, HARSHAD R	
2101 L Street, NW			ART UNIT	
Washington, DC 20037			PAPER NUMBER	
			2855	

DATE MAILED: 12/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/858,476

Applicant(s)

KIKAWA ET AL.

Examiner

Harshad Patel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 36-49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 36-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_.

***Response to Arguments***

1. Applicant's arguments filed 11/12/04 have been fully considered but they are not persuasive. Applicant argues that the prior art of record does not teach a module housing defining a sub passage and having an inlet, an outlet and a curved portion. Such argument is not persuasive. Weber teaches a module housing (10) having all the features as claimed. As to the argument that the curved path of Weber does not provide a smooth extended outlet is not persuasive. It is well known that comparing a curved surface to the perpendicular blunt or flat surface provides a smoother transition of the flow towards the outlet. Weber's downstream curved portion would provide a smoother flow compared to the instant layout where the outlet is positioned at a perpendicular position. As to the effect of inertia, any device held in a vertical position and having a curved point at the bottom would have an inertia that the flow medium would go through since the flow coming from the top would go through the bottom part and any heavy particles in the flow would be attracted to the bottom due to its weight and later pushed out either through an additional opening, such as a vent, or through the outlet.

***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the air vent located upstream from the flow measuring element" (claim 44) and "the air vent downstream of the flow measuring element" (claim 43) (claim 44 depends on claim 43, thus both the vents must be shown in a single figure or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure

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must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

3. Claims 42, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 42, "the grooved surface" lacks antecedent basis.

Claims 47 and 48, it is unclear as to what optical projection is the applicant referring to. There is no explanation of the optical projection in the specification.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 39-42, 46 and 49 are rejected under 35 U.S.C. 102(e) as being anticipated by Watanabe et al. (6,571,621) (hereinafter Watanabe).

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6. Watanabe teaches an air flow measuring device comprising a module housing (31) including an electrical circuit (32) incorporated in a portion thereof, a sub passage (6) having an inlet (7) and an outlet (8), a flow measuring element (4) located downstream of a curved portion. Grooves (2) are provided on an outer peripheral surface of the sub passage in the curved path. As to the applying inertia, as discussed in the specification, by providing the curved portion at the bottom due to the weight of the particles, it will have inertia that would draw the particles towards the bottom thus not interfering with the flow measuring element.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 36-38, and 43-45 are rejected, as applied to depend under claim 35, under 35 U.S.C. 103(a) as being unpatentable over Watanabe in view of Zurek et al. (5,355,726) (hereinafter Zurek). Watanabe teaches all the specifics of the claimed invention except for the air vent located downstream of the measuring element. Zurek, in the same field of endeavor, teaches the air vent (46) located downstream of the measuring element. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide an air vent upstream or downstream of the measuring element since such an arrangement would reduce air flow through the sub passage during back flow thereby reducing value of signal generated by the sensor during the back flow. It is further noted that the air vent of Zurek is a calibrated aperture, which would inherently be of a dimension that is far below the inlet or outlet opening of the sub passage. It would further assist the dirt particles flowing along with the flowing medium to be

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removed for the sub passage and aspirated into the main flow line thus preventing the measuring element. As to positioning the air vent upstream or downstream would be within the scope of an individual since such location of the vent openings are merely used to vent out the dirt particles traveling with the flowing medium. As to the ratio between the opening surface area of the air vent and the sectional surface area of the sub passage being less than 1:10 would be a matter of experimental achievement since the vent opening should be of such a size that only dirt particles are exhausted out and not the flowing medium.

9. Claims 47 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe in view of Igarashi et al. (5,696,321) (hereinafter Igarashi).

Watanabe shows all the features of the instant invention except for the inclined surface and an air vent. Igarashi teaches an inclined surface and an air vent (309). It would be obvious to provide such an arrangement in order to direct the dirt particles out of the sub passage.

### ***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harshad Patel whose telephone number is (571) 272-2187. The examiner can normally be reached on Monday-Thursday (7:00 AM-5:30 PM).

A handwritten signature in black ink, appearing to read 'H. Patel', with a stylized flourish underneath.

*Harshad Patel*  
*Primary Examiner*  
*Art Unit 2855*

hp  
November 30, 2004